

REMARKS

Claims 1-13 are pending in the Application. Claims 1-13 are rejected under 35 U.S.C. § 103(a). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

I. REJECTIONS OF CLAIMS 1-3 AND 10-11 UNDER 35 U.S.C. §103(a):

The Examiner has rejected claims 1-3 and 10-11 under 35 U.S.C. §103(a) as being unpatentable over Gilbert et al. (U.S. Patent No. 3,866,533) (hereinafter "Gilbert") in view of Ohsawa et al. (U.S. Patent No. 4,774,882) (hereinafter "Ohsawa"). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

A. The Examiner has not provided a *prima facie* case of obviousness for rejecting claims 1-3 and 10-11

A *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art reference to make the claimed inventions. M.P.E.P. §2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d. 1453,1458 (Fed. Cir. 1998). The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000); *In re Dembiczak*, 50 U.S.P.Q.2d. 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying Gilbert: (1) to include an impact force controller for changing the force with which the pins impact in accordance with the settings for characters that are to be printed; and (2) to generate impact power to the pins in accordance with the types of an identified character set is "so that a design density for a selected character can be achieved." Paper No. 6, pages 3-4.

There is no motivation to combine Gilbert with Ohsawa as there is no suggestion or motivation in either Gilbert or Ohsawa, or in their combination, or in the knowledge of those ordinarily skilled in the art to combine the teaching of providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms, as taught in Gilbert, with the teaching of increasing printing impact energy in the case of a normal density imprint function and decreasing printing impact energy in the case of a high density imprint function, as taught in Ohsawa. Gilbert teaches:

Impression control for an impact printer is provided by changing the width of the pulse applied to the print hammers in accordance with the thickness of the forms on which printing is being performed and in accordance with the voltage of the source energizing the print hammers, so as to maintain a constant impact force to provide uniform print density for different form thicknesses. Misregistration of characters caused by a variation in the rate of movement of the print hammer is compensated for by changing the start time of the pulse energizing the hammer. Abstract.

Thus, Gilbert teaches providing impression control for an impact printer by *changing the width of the pulse applied to the print hammer* in accordance with the thickness of the forms. Further, Gilbert teaches *a constant impact force is maintained to provide uniform print density for different form thicknesses.*

Ohsawa, on the other hand, teaches:

A method for controlling printing impact in an impact type *dot printer which controls printing impact energy to be increase in case of normal density imprint function and to be decreased in case of high density imprint function* in the controlling means of the impact type dot printer in which the printing stylus strikes the printing paper so that the printing paper can be prevented from being damaged during the high density imprint function. Abstract.

Thus, Ohsawa teaches a dot matrix printer that increases the printing impact energy in the case of a normal density imprint function and decreases the printing impact energy in the case of a high density imprint function.

The Examiner has not shown why a reference that teaches providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms as well as providing a constant impact force, as taught in Gilbert, should be combined with a reference that teaches a dot matrix printer that increases the printing impact power in the case of a normal density imprint function and decreases the printing impact power in the case of a high density imprint function, as taught in Ohsawa, from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of combining the reference that teaches providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms as well as providing a constant impact force with a reference that teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not present a *prima facie* case of obviousness for rejecting claims 1-3 and 10-11.

As stated above, the Examiner's motivation for modifying Gilbert to include an impact force controller for changing the force with which the pins impact in accordance with the settings for characters that are to be printed is so that a design density for a selected character can be achieved. The Examiner has not shown why Gilbert should be modified to include an impact force controller for changing the force with which the pins impact in accordance with the settings for characters that are to be printed from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Further, the Examiner has not shown why Gilbert should be modified to generate impact power to the pins in accordance with the types of an identified character set from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *Id.* Further, the Examiner has not shown why Gilbert should be modified so that a design density for a selected character can be achieved from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *Id.* The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Gilbert to include an impact force controller for changing the force with which the pins impact in accordance with the settings for characters that are to be printed. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Further, the Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Gilbert to generate impact power to the pins in accordance with the types of an identified character. *Id.* Further, the Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Gilbert so that a design density for a selected character can be achieved. *Id.* Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 1-3 and 10-11.

Furthermore, if the proposed modification or combination of the prior art would *change the principle of the operation of the prior art invention being modified*, then the teachings of the references are not sufficient to render the claims *prima facie*

obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959). Further, if the proposed modification would *render the prior art invention being modified unsatisfactory for its intended purpose*, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). As stated above, Gilbert teaches providing impression control for an impact printer by *changing the width of the pulse applied to the print hammer* in accordance with the thickness of the forms. Gilbert further teaches a *constant impact force is maintained to provide uniform print density for different form thicknesses*. However, Ohsawa teaches increasing the printing impact energy in the case of a normal density imprint function and decreasing the printing impact energy in the case of a high density imprint function. By combining Gilbert and Ohsawa, Gilbert would no longer be able to maintain a *constant impact to provide uniform print density for different form thicknesses*. Instead, the *impact force would be adjusted based on whether the printing mode is a normal density or a high density*.

Furthermore, Gilbert teaches:

A plurality of print hammers 20 are positioned one in each position along the print line *for impacting the document 22 and a ribbon 24 against selected type characters 13 as they pass the different print positions*. Timing marks 16 are provided on the band 12 which are scanned by a transducer 18 and used for producing timing signals for use in the control system. Column 2, lines 19-26.

Thus, Giblert teaches *imprinting an entire character at one time*. However, as stated above, Ohsawa teaches a dot matrix printer. *A dot matrix printer imprints dots or portions of a character at one time*. Hence, by combining Gilbert with Ohsawa, *Gilbert would no longer be able to imprint an entire character at one time*.

Thus, by combining Gilbert with Ohsawa, the *principle of operation in Gilbert would change* and subsequently *render the operation of Gilbert to perform its purpose unsatisfactory*. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 1-3 and 10-11.

II. REJECTIONS OF CLAIMS 4 AND 6 UNDER 35 U.S.C. §103(a):

The Office Action has rejected claims 4-6 as being unpatentable over Quaif, et al. (U.S. Patent No. 4,020,939) (hereinafter "Quaif") in view of Ohsawa. Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

A. The Examiner Has Not Presented a *Prima Facie* Case of Obviousness for Rejecting Claims 4 and 6.

As stated above, a *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art references to make the claimed inventions. M.P.E.P. § 2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d. 1453, 1458 (Fed. Cir. 1998). The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000); *In re Dembiczak*, 50 U.S.P.Q.2d. 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying Quaif with Ohsawa to have a controller for changing the impact force of the pins in accordance with the types of characters that are to be printed is so that "a design density for a selector character can be achieved." Paper No. 2, Page 5.

There is no motivation to combine Quaif with Ohsawa as there is no suggestion or motivation in either Quaif or Ohsawa or in their combination or in the knowledge of those ordinarily skilled in the art to combine the teaching of *varying the print hammer repetition rate in accordance with the printing speed to maintain constant width of the printed characters*, as taught in Quaif, with the teaching of *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function*, as taught in Ohsawa. Quaif teaches:

[a] matrix printer hammer repetition rate control is disclosed for varying the print hammer repetition rate in accordance with printing speed, thereby maintaining constant width of printed characters without dot column sensing. Abstract.

Thus, Quaif teaches varying the print hammer repetition rate in accordance with the printing speed to maintain a constant width of the printed characters. As stated above, Ohsawa teaches increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function.

The Examiner indicates that both Quaif and Ohsawa teach controlling the impact force of the hammers. Paper No. 6, page 10. However, this does not show why a reference that teaches *varying the print hammer repetition rate to maintain a constant width of the printed characters*, as taught in Quaif, should be combined with a reference that teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function*, as taught in Ohsawa, from either the *nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art*. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Further, the Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of combining the reference that teaches varying the print hammer repetition rate to maintain constant width of the printed characters with a reference that teaches increasing the printing impact power in the case of a normal

density imprint function and decreasing the printing impact power in the case of a high density imprint function. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not present a *prima facie* case of obviousness for rejecting claims 4 and 6.

Furthermore, as stated above, the Examiner's motivation for modifying Quaif with Ohsawa to have a *controller for changing the impact force of the pins in accordance with the types of characters that are to be printed* is so that a design density for a selector character can be achieved. The Examiner has not objectively shown why Quaif should be modified to have a *controller for changing the impact force of the pins in accordance with the types of characters that are to be printed* from either *the nature of the problem to be solved, the teaching of the prior art or the knowledge of persons of ordinary skill in the art*. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Furthermore, the Examiner has not objectively shown why Quaif should be modified so that a design density for a selected character can be achieved from either *the nature of the problem to be solved, the teaching of the prior art or the knowledge of persons of ordinary skill in the art*. *Id.* The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Quaif to use a *controller for changing the impact force of the pins in accordance with the types of characters that are to be printed*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Further, the Examiner must submit **objective evidence** and not rely on his own subjective opinions in support of modifying Quaif so that a design density for a selected character can be achieved. *Id.* Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4 and 6.

Further, there is no motivation to modify Quaif with Ohsawa as the *proposed modification would render the invention in Quaif unsatisfactory for its intended purpose and therefore there is no suggestion or motivation to make the proposed modification*. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984); M.P.E.P. § 2143.01. Furthermore, the *proposed modification would change the*

principle of operation of Quaif and therefore the teachings of Quaif are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959); M.P.E.P. § 2143.01. Quaif teaches that:

[t]he print head impact energy is maintained substantially constant during printing by the novel hammer impact control circuitry of the present invention. The print head energy, in the form of electrical impulses, is applied to the individual matrix wire solenoid drivers in the print head, and is maintained constant notwithstanding variations in the output voltage or current of power supply. Column 3, lines 39-46.

Thus, Quaif teaches that the *print head impact energy is maintained substantially constant during printing*. As stated above, Ohsawa teaches *increasing the printing impact energy in the case of a normal density imprint function and decreasing the printing impact energy in the case of a high density imprint function*. Thus, by combining Ohsawa with Quaif, Quaif would no longer be able to maintain the print head impact energy to be substantially constant during printing. Hence, the proposed modification would render the invention in Quaif unsatisfactory for its intended purpose, and therefore, there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984); M.P.E.P. § 2143.01. Furthermore, the *proposed modification would change the principal of operation of Quaif*, and therefore, the teachings of Quaif are not sufficient to render the claims *prima facie* obvious as a matter of law. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. § 349 (C.C.P.A. 1959); M.P.E.P. § 2143.01. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 4 and 6.

B. Quaif and Ohsawa, taken singularly or in combination, do not teach or suggest the following claim limitations.

Quaif and Ohsawa, taken singularly or in combination, do not teach or suggest “a drive unit, for reciprocally driving the pins in both forward and backward directions relative to the form on the platen” as recited in claim 4 and similarly in claim 6. The Examiner refers to element 18 in Figure 1 of Quaif as reading the above-cited claim limitation. Paper No. 2, page 4; Paper No. 6, page 11. Instead, Quaif teaches:

[t]he carriage upon which the print heads are mounted is driven by a reversible dc motor under the control of motor control for accelerating motor up to print velocity and for maintaining a substantially constant velocity during printing. Motor control varies the speed of dc motor by means of a dual feedback from the driven carriage and from power supply to maintain constant motor speed during power supply variations, without conventional regulation circuitry. Column 3, lines 14-23.

Thus, Quaif teaches *driving a carriage using a reversible dc motor* which suggests driving the carriage in both directions. However, *driving a carriage* does not correspond to *reciprocally driving the pins in both forward and backward directions relative to the form on the platen*. Accordingly, one skilled in the art would not be able to recreate claims 4 and 6 in view of the cited prior art.

III. REJECTION OF CLAIM 5 UNDER 35 U.S.C. §103(a):

The Office Action has rejected claim 5 as being unpatentable over Quaif in view of Ohsawa in further view of the IBM Technical Disclosure Bulletin (NN7903410). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

As stated above, a *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must

provide a motivation or suggestion to combine or modify the prior art reference to make the claimed inventions. M.P.E.P. § 2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453,1458 (Fed. Cir. 1998). The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 200); *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying Quaif with Ohsawa and the IBM Technical Disclosure Bulletin so that the moving velocity of the pins is changed in order to alter the impact force is "so that the impact force for the selected character can be precisely achieved." Paper No. 2, page 6; Paper No. 6, page 11.

There is no motivation to combine Quaif and Ohsawa with the IBM Technical Disclosure Bulletin as there is no suggestion or motivation in either Quaif, Ohsawa or the IBM Technical Disclosure Bulletin or in their combination or in the knowledge of those ordinary skilled in the art to combine the teaching of *varying the print hammer repetition rate in accordance with the printing speed to maintain constant width of the printed characters*, as taught in Quaif, with the teaching of *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function*, as taught in Ohsawa, as well as with the teaching of *assigning a specific impact velocity to each character in the font*, as taught in the IBM Technical Disclosure Bulletin. As stated above, Quaif teaches *varying the print hammer repetition rate in accordance with the printing speed to maintain constant width of the printed characters*. Furthermore, as

stated above, Ohsawa teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high-density imprint function*. Furthermore, the IBM Technical Disclosure Bulletin teaches “a specific impact velocity” that “should be assigned to each character in the font.” *IBM Technical Disclosure Bulletin* (March 1979), page 410. The IBM Technical Disclosure Bulletin further teaches that “attached to the rocker is a velocity transducer which feeds a signal proportional to the velocity of the rocker and thus the print element.” The *IBM Technical Disclosure Bulletin* (March 1979), page 4110. Thus, the IBM Technical Disclosure Bulletin teaches assigning a specific impact velocity to each character.

The Examiner has not shown why a reference that teaches *varying the print hammer repetition rate to maintain a constant width of the printed characters*, as taught in Quaif, should be combined with a reference that teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function*, as taught in Ohsawa, as well as with a reference that teaches *assigning a specific impact velocity to each character* as taught in the IBM Technical Disclosure Bulletin from either the *nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art*. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of combining the reference that teaches *varying the print hammer repetition rate to maintain constant width of the printed characters* with a reference that teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function* as well as with a reference that teaches *assigning a specific impact velocity to each character*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 5.

As stated above, the Examiner's motivation for modifying Quaif with Ohsawa and the IBM Technical Disclosure Bulletin so that the *moving velocity of the pins is changed in order to alter the impact force is so that the impact force for the selected character can be precisely achieved*. The Examiner has not shown why Quaif should be modified with Ohsawa and the IBM Technical Disclosure Bulletin to *change the moving velocity of the pins in order to alter the impact force* from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Furthermore, the Examiner has not shown why Quaif should be modified with Ohsawa and the IBM Technical Disclosure Bulletin so that the *impact force for the selected character can be precisely achieved* from either the nature of the problem to be solved, the teachings of the prior art or the knowledge of persons of ordinary skill in the art. *Id.* The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Quaif with Ohsawa and the IBM Technical Disclosure Bulletin to *change the moving velocity of the pins in order to alter the impact force*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2000). Furthermore, the Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Quaif with Ohsawa and the IBM Technical Disclosure Bulletin so that the *impact force for the selected character can be precisely achieved*. *Id.* Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 5.

IV. REJECTION OF CLAIMS 7-9 UNDER 35 U.S.C. §103(a):

The Office Action has rejected claims 7-9 as being unpatentable over Gilbert in view of Kobayahsi et al. (U.S. Patent No. 4,566,813) (hereinafter "Kobayashi"). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

A. **The Examiner has not provided any motivation for combining Gilbert with Kobayashi**

As stated above, a *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art reference to make the claimed inventions. M.P.E.P. §2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d. 1453,1458 (Fed. Cir. 1998). The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000); *In re Dembiczak*, 50 U.S.P.Q.2d. 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying Gilbert to change an impact force exerted by a plurality of pins in accordance with the number of dots that are arranged across the widths of lines forming the print image is "so that the thickness or the print density of a selected character or image can be consistency maintained." Paper No. 6, page 7.

There is no motivation to combine Gilbert with Kobayashi as there is no suggestion or motivation in either Gilbert or Kobayashi, or in their combination, or in the knowledge of those ordinarily skilled in the art to combine the teaching of providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms, as taught

in Gilbert, with the teaching of a dot matrix controller comprising a counter means for counting the number of dots of a dot pattern to be printed, as taught in Kobayashi.

As stated above, Gilbert teaches providing impression control for an impact printer by *changing the width of the pulse applied to the print hammer* in accordance with the thickness of the forms. Further, Gilbert teaches a *constant impact force is maintained to provide uniform print density for different form thicknesses*.

Kobayashi, on the other hand, teaches:

A dot-matrix print controller having a dot pattern generating means for generating a dot pattern to be printed and a means for supplying current pulses to a dot-matrix print head in accordance with an output of said dot pattern generating means, said controller comprising a counter means for counting the number of dots of a dot pattern to be printed; and a pulse width control means for controlling the width of said current pulses applied to said print head so that the thickness of print is constant. Abstract.

Thus, Kobayashi teaches a dot matrix controller comprising a counter means for counting the number of dots of a dot pattern to be printed.

The Examiner has not shown why a reference that teaches providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms as well as providing a constant impact force, as taught in Gilbert, should be combined with a reference that teaches a dot matrix controller comprising a counter means for counting the number of dots of a dot pattern to be printed, as taught in Kobayashi, from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of combining the reference that teaches providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms as well as providing a constant

impact force with a reference that teaches a dot matrix controller comprising a counter means for counting the number of dots of a dot pattern to be printed. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not present a *prima facie* case of obviousness for rejecting claims 1-3 and 10-11.

As stated above, the Examiner's motivation for modifying Gilbert to change an impact force exerted by a plurality of pins in accordance with the number of dots that are arranged across the widths of lines forming the print image is so that the thickness or the print density of a selected character or image can be consistently maintained. The Examiner has not shown why Gilbert should be modified to change an impact force exerted by a plurality of pins in accordance with the number of dots that are arranged across the widths of lines forming the print image from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of modifying Gilbert to change an impact force exerted by a plurality of pins in accordance with the number of dots that are arranged across the widths of lines forming the print image. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2000). Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 7-9.

Furthermore, if the proposed modification or combination of the prior art would *change the principle of the operation of the prior art invention being modified*, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959). Further, if the proposed modification would *render the prior art invention being modified unsatisfactory for its intended purpose*, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). As stated above, Gilbert teaches *imprinting an entire character at one time*. However, as stated above, Kobayashi teaches a dot matrix printer. *A dot matrix printer imprints dots or portions of a character at one time*. Hence, by

combining Gilbert with Kobayashi, *Gilbert would no longer be able to imprint an entire character at one time*. Thus, by combining Gilbert with Kobayashi, the *principle of operation in Gilbert would change and subsequently render the operation of Gilbert to perform its purpose unsatisfactory*. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 7-9.

B. Gilbert and Kobayashi, taken singly or in combination, do not teach or suggest the following limitations

Gilbert and Kobayashi, taken singly or in combination, do not teach or suggest an "*wherein the impact force is set to a mode at one of a plurality of levels, and the impact force controller changes the mode in accordance with the number of dots that are arranged across the widths of lines forming an object image*" as recited in claim 8. The Examiner directs Applicant's attention to columns 3-5 of Kobayashi as teaching the above-cited claim limitation. Paper No. 6, page 6. Instead, Kobayashi teaches:

Steps 501 and 502 in FIG. 4 check whether or not the print signal is issued within a certain time interval. If the print signal is not entered, the pulse width is set to the initial value in step 503, or if the print signal is entered, control is transferred to step 504 in which the total number of dots for one character is counted and it is printed by steps 601-609 as shown in the flowchart of FIG. 5. In steps 504 and 505 of FIG. 4, the number of dots is checked and if *it is larger than the specified value, as in the cases of complex characters such as " ", " " and " ", the print head is much heated due to the considerable amount of power applied to it, and on this account, the pulse width for a character printed next is reduced in step 506. The pulse width goes on decreasing and when it has fallen below the lower limit, control branches from step 507 to step 508 in which the pulse width is set to the lower limit. If, on the other hand, the number of dots is found smaller in step 505, as in the cases of printing simple characters such as " " and "0", the print head is cooled, and the pulse width for a character printed next is increased in step 509. Similarly to step 507, step 510 checks the increasing pulse width and it is set to the upper limit in step 511 when it exceeds the upper limit. The process completes by setting the timer in step 512. Column 3, line 52 – column 4, line 8.*

Thus, Kobayashi teaches reducing the pulse width for a character to be printed next in response to a high temperature of the print head, i.e., in response to the print head printing a complex character. Kobayashi further teaches that the pulse width continues to be reduced until it has fallen below a lower limit. Kobayashi further teaches increasing the pulse width for a character to be printed next in response to a low temperature of the print head, i.e., in response to the print head printing a simple character. Kobayashi further teaches that the pulse width continues to be increased until it exceeds an upper limit. Hence, Kobayashi teaches determining if a pulse width is greater than or less than a limit. This does not teach or suggest *setting the impact force to a mode at one of a plurality of levels*. Further, this language does not teach or suggest of a *controller changing modes in accordance with the number of dots that are arranged across the widths of lines forming an object image*. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 8. M.P.E.P. §2142.

For at least the above reasons, claim 8 is patentable over Gilbert in view of Kobayashi. Claim 9 recites combinations of features including the above combinations, and thus is patentable for at least the above reasons as well. Claim 9 recites additional features, which, in combination with the features of the claim upon which they depend, is patentable over Gilbert in view of Kobayashi.

For example, Gilbert and Kobayashi, taken singly or in combination, do not teach or suggest "wherein, the *command for changing the mode is included in print data for a character*, and the *impact force controller changes the mode in response to said mode*" as recited in claim 9. The Examiner directs Applicant's attention to columns 3-6 of Kobayashi as teaching the above-cited claim limitation. Paper No. 6, page 7. Instead, as stated above, Kobayashi teaches reducing the pulse width for a character to be printed next in response to a high temperature of the print head, i.e., in response to the print head printing a complex character. Kobayashi further teaches that the pulse width continues to be reduced until it has fallen below a lower limit.

Kobayashi further teaches increasing the pulse width for a character to be printed next in response to a low temperature of the print head, i.e., in response to the print head printing a simple character. Kobayashi further teaches that the pulse width continues to be increased until it exceeds an upper limit. Hence, Kobayashi teaches determining if a pulse width is greater than or less than a limit. This does not teach or suggest *setting the impact force to a mode at one of a plurality of levels*. Further, this language does not teach or suggest that *a command for changing the mode is included in print data for a character*. Further, this language does not teach or suggest a *controller changing modes*. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 9. M.P.E.P. §2142.

V. REJECTION OF CLAIMS 12-13 UNDER 35 U.S.C. §103(a):

The Office Action has rejected claims 12-13 as being unpatentable over Gilbert in view of Ohsawa in further view of the IBM Technical Disclosure Bulletin. Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

A. The Examiner has not provided any motivation for combining Gilbert, Kobayashi and the IBM Technical Disclosure Bulletin

As stated above, a *prima facie* showing of obviousness requires the Examiner to establish, *inter alia*, that the prior art references teach or suggest, either alone or in combination, all of the limitations of the claimed invention, and the Examiner must provide a motivation or suggestion to combine or modify the prior art reference to make the claimed inventions. M.P.E.P. § 2142. The motivation or suggestion to combine references must come from one of three possible sources: the nature of the problem to be solved, the teaching of the prior art and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 47 U.S.P.Q.2d. 1453,1458 (Fed. Cir. 1998). The showings must be clear and particular. *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433-34 (Fed. Cir. 2002); *In re Kotzab*, 217 F.3d 1365, 1370, 55

U.S.P.Q.2d 1313, 1317 (Fed. Cir. 200); *In re Dembiczak*, 50 U.S.P.Q.2d. 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. *Id.*

In order to reject under 35 U.S.C. § 103, therefore, the Examiner must provide a proper motivation for combining or modifying the references. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-1458 (Fed. Cir. 1998); M.P.E.P. § 2142. The Examiner's motivation for modifying Gilbert with Ohsawa and the IBM Technical Disclosure Bulletin to include a print head controller that selects and designates one setup value that corresponds to a character font from among values that are prepared for a plurality of levels to control the impact force transferred by pins is "so that the impact force for the selected character can be precisely achieved." Paper No. 6, page 8.

There is no motivation to combine Gilbert and Ohsawa with the IBM Technical Disclosure Bulletin as there is no suggestion or motivation in either Quaif, Ohsawa or the IBM Technical Disclosure Bulletin or in their combination or in the knowledge of those ordinary skilled in the art to combine the teaching of *providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms*, as taught in Gilbert, with the teaching of *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function*, as taught in Ohsawa, as well as with the teaching of *assigning a specific impact velocity to each character in the font*, as taught in the IBM Technical Disclosure Bulletin. As stated above, Gilbert teaches providing impression control for an impact printer by *changing the width of the pulse applied to the print hammer* in accordance with the thickness of the forms. Gilbert further teaches a *constant impact force is maintained to provide uniform print density for different form thicknesses*. Furthermore, as stated above, Ohsawa teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high-density imprint function*.

Furthermore, as stated above, the IBM Technical Disclosure Bulletin teaches assigning a specific impact velocity to each character.

The Examiner has not shown why a reference that teaches *providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the forms*, as taught in Gilbert, should be combined with a reference that teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function*, as taught in Ohsawa, as well as with a reference that teaches *assigning a specific impact velocity to each character* as taught in the IBM Technical Disclosure Bulletin from either the *nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art*. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The Examiner must submit **objective evidence** and not rely on his own subjective opinion in support of combining the reference that teaches *providing impression control for an impact printer by changing the width of the pulse applied to the print hammer in accordance with the thickness of the form* with a reference that teaches *increasing the printing impact power in the case of a normal density imprint function and decreasing the printing impact power in the case of a high density imprint function* as well as with a reference that teaches *assigning a specific impact velocity to each character*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 12-13.

As stated above, the Examiner's motivation for modifying Gilbert with Ohsawa and the IBM Technical Disclosure Bulletin to include a print head controller that selects and designates one setup value that corresponds to a character font from among values that are prepared for a plurality of levels to control the impact force transferred by pins is so that the impact force for the selected character can be precisely achieved. The Examiner has not shown why Gilbert should be modified with Ohsawa and the IBM Technical Disclosure Bulletin *to include a print head*

controller that selects and designates one setup value that corresponds to a character font from among values that are prepared for a plurality of levels to control the impact force transferred by pins from either the nature of the problem to be solved, the teachings of the prior art or in the knowledge of persons of ordinary skill in the art. In re Rouffet, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Furthermore, the Examiner has not shown why Gilbert should be modified with Ohsawa and the IBM Technical Disclosure Bulletin so that the impact force for the selected character can be precisely achieved from either the nature of the problem to be solved, the teachings of the prior art or the knowledge of persons of ordinary skill in the art. Id. The Examiner must submit objective evidence and not rely on his own subjective opinion in support of modifying Quaif with Ohsawa and the IBM Technical Disclosure Bulletin to include a print head controller that selects and designates one setup value that corresponds to a character font from among values that are prepared for a plurality of levels to control the impact force transferred by pins. In re Lee, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2000). Furthermore, the Examiner must submit objective evidence and not rely on his own subjective opinion in support of modifying Quaif with Ohsawa and the IBM Technical Disclosure Bulletin so that the impact force for the selected character can be precisely achieved. Id. Therefore, the Examiner has not presented a prima facie case of obviousness for rejecting claims 12-13.

B. Gilbert, Kobayashi and the IBM Technical Disclosure Bulletin, taken singly or in combination, do not teach or suggest the following limitations

Gilbert, Kobayashi and the IBM Technical Disclosure Bulletin, taken singly or in combination, do not teach or suggest "a data analyzer, for determining the type of character set included in print data in accordance with the predetermined command that is entered when a character font is to be changed" as recited in claims 12 and 13.

The Examiner directs Applicant's attention to elements 28 and 30 of Gilbert as teaching the above-cited claim limitation. Paper No. 6, page 8. Instead, Gilbert teaches:

Information to be printed is stored in a print line buffer 26 which is scanned by the usual X drivers 28 and Y drivers 30 under the control of an X ring 32 and a Y ring 34 as described in the Demer et al. patent. Column 2, lines 27-30.

Thus, Gilbert teaches scanning information stored in a buffer using X and Y drivers. However, this language does not teach or suggest determining the type of character set included in print data in accordance with a *command* that is entered when a *character font is to be changed*. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 12 and 13. M.P.E.P. §2142.

Gilbert, Kobayashi and the IBM Technical Disclosure Bulletin, taken singly or in combination, do not teach or suggest "a print head controller, for *employing the determination results* obtained by the data analyzer to change the impact force transferred by the pins" as recited in claims 12 and 13. As stated above, the Examiner directs Applicant's attention to elements 28 and 30 of Gilbert as teaching determining the type of character set included in print data in accordance with the predetermined command that is entered when a character font is to be changed. Paper No. 6, page 8. However, as stated above, Gilbert teaches scanning information stored in a buffer using X and Y drivers. Gilbert does not teach or suggest determining the type of character set included in print data in accordance with a *command* that is entered when a *character font is to be changed*. Hence, Gilbert, Kobayashi and the IBM Technical Disclosure Bulletin, taken singly or in combination, do not teach or suggest a print head controller that *employs the determination results* obtained by the data analyzer to change the impact force transferred by the pins. Therefore, the Examiner has not presented a *prima facie* case of obviousness for rejecting claims 12 and 13. M.P.E.P. §2142.

VI. CONCLUSION

As a result of the foregoing, it is asserted by Applicant that claims 1-13 in the Application are in condition for allowance, and Applicant respectfully requests an allowance of such claims. It is noted that limitations are italicized only for emphasis. Limitations that are italicized are not meant to imply that only those limitations are not taught or suggested in the cited prior art. Applicant respectfully requests that the Examiner call Applicant's attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining issues.

Respectfully submitted,

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